While the invention has been particularly shown and described with reference to the preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made without departing from the spirit and scope of the invention.

What is claimed is:

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1. A method for improving a CMOS active image sensor chip that includes an array of pixels, comprising:

providing, on said chip, a directory for storing pixel addresses;

testing the pixel array to determine at which addresses bad pixels are located;

permanently storing in said directory said bad pixel addresses;

focusing an image on the image sensor;

checking the directory to determine if any given pixel of the sensor array is bad;

if a particular pixel is found to be bad, thereby showing that its signal is spurious, transferring signal intensity data from the bad pixel's nearest neighbors into a buffer memory;

from said nearest neighbor data, computing a replacement value for the bad pixel; and

substituting said replacement value for said bad pixel signal value.

2. The method recited in claim 1 wherein the step of permanently storing the bad addresses further comprises using fusible link technology or anti-fuse technology or flash memory technology.

3. The method recited in claim 1 wherein the step of computing replacement signal data from nearest neighbors and then transferring it to the array is performed on the chip.

4. The method recited in claim 1 wherein the step of computing replacement signal data from nearest neighbors and then transferring it to the array is performed on a separate chip.

5. The method recited in claim 1 wherein the step of computing replacement signal data from nearest neighbors and then transferring it to the array is performed on a host computer.

6. The method recited in claim 1 wherein said nearest neighbors are in the same row as the bad pixel.

7. The method recited in claim 1 wherein said nearest neighbors are in the same column as the bad pixel.

8. The method recited in claim 1 wherein said nearest neighbors are on the same diagonal as the bad pixel.

9. A method for improving a Bayer pattern color mosaic, comprising:

providing a chip having an array of alternating blue-green and red-green sensors;

providing, on said chip, a directory for storing pixel addresses;

testing the pixel array to determine at which addresses bad pixels are located;

permanently storing in said directory said bad pixel addresses;

focusing an image on the array;

checking the directory to determine if any given pixel of the sensor array is bad;

if a particular pixel is determined to be bad, thereby showing that its signal is spurious, transferring signal intensity data, derived from the bad pixel's nearest neighbors of the same color, into a buffer memory;

from said same-color nearest neighbor data, computing a replacement value for the bad pixel; and

substituting said replacement value for said bad pixel signal value.

10. The method recited in claim 9 wherein the step of permanently storing the bad addresses further comprises using fusible link technology or anti-fuse technology or flash memory technology.

11. The method recited in claim 9 wherein the step of computing replacement signal data from same-color nearest neighbors and then transferring it to the array is performed on the chip.

12. The method recited in claim 9 wherein the step of computing replacement signal data from same-color nearest neighbors and then transferring it to the array is performed

on a separate chip.

13. The method recited in claim 9 wherein the step of computing replacement signal data from same-color nearest neighbors and then transferring it to the array is performed on a host computer.

14. The method recited in claim 9 wherein said same-color nearest neighbors are limited to the same row as the bad pixel.

15. The method recited in claim 9 wherein said same-color nearest neighbors are in the same column as the bad pixel.

16. The method recited in claim 9 wherein said same-color nearest neighbors are on the same diagonal as the bad pixel.

17. A method for improving a pixel array, comprising:

testing the pixel array to determine at which address a bad pixel is located;

disconnecting said bad pixel from the array; and

connecting one or more of said bad pixel's nearest neighbors to the array at said address, whereby said nearest neighbors serve, in combination, as a replacement for said bad pixel.

18. The method recited in claim 17 wherein the steps of disconnecting said bad pixel from, and connecting one or more nearest neighbor pixels to, the array further comprises using fusible link technology or anti-fuse technology.

19. The method recited in claim 17 wherein the step of testing the pixel array to determine at which address a bad pixel is located is performed prior to dicing into chips, thereby enabling the steps of disconnecting said bad pixel from, and connecting one or more nearest neighbor pixels to, the array to be accomplished by means of chip-level wiring.

20. The method recited in claim 17 wherein said nearest neighbors are all in the same row as the bad pixel.